

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A substrate processing method comprising:
preparing a dry substrate having both a metal region and an insulating film on a surface thereof;
during a pre-plating treatment while sealing an outer peripheral portion of the dry substrate, bringing a pretreatment liquid into contact with the surface of the dry substrate in such a manner as to:
remove a metal oxide film from a surface of the metal region and remove residue from a surface of the insulating film;
impart a catalyst to the metal region so as to activate the surface of the metal region; and
form a continuous pretreatment film on the surface of the substrate to prevent the activated surface of the metal region from being re-oxidized;
removing the pretreatment liquid remaining on the surface of the substrate in a rinsing treatment while exposing the outer peripheral portion of the substrate;
performing an electroless plating process on the surface of the substrate to selectively form an alloy film on the surface of said metal region while exposing the outer peripheral portion of the substrate; and
post-cleaning and drying the substrate after the electroless plating process;
wherein the pretreatment liquid is an aqueous liquid formed of a mixture including at least one of a group consisting of palladium chloride, palladium sulfate, and palladium acetate, and at least one of a group consisting of hydrochloric acid, sulfuric acid, fluoric acid, acetic acid, oxalic acid, formic acid, citric acid, and tartaric acid.

Claims 2-5 (Cancelled).

6. (Previously Presented) A substrate processing method according to claim 1, wherein said pre-plating treatment and said rinsing treatment include ejecting a chemical solution or pure water from a nozzle toward the surface of the substrate which faces downwardly.

7. (Previously Presented) A substrate processing method according to claim 6, further comprising rotating the substrate during said pre-plating treatment and said rinsing treatment.

8. (Previously Presented) A substrate processing method according to claim 6, wherein a nozzle used in said pre-plating treatment and a nozzle or nozzles used in said rinsing treatment are connected to respective different flow path systems.

Claim 9 (Cancelled).

10. (Previously Presented) A substrate processing method according to claim 7, wherein said rotating comprises rotating the substrate at a higher speed after said pre-plating treatment is completed.

Claim 11 (Cancelled).

12. (Previously Presented) A substrate processing method according to claim 1, wherein said rinsing treatment includes cleaning the surface of the substrate with pure water or pure water having a reducing capability increased by electrolysis or by dissolving a hydrogen gas.

13. (Previously Presented) A substrate processing method according to claim 1, wherein said rinsing treatment includes cleaning the surface of the substrate with an aqueous liquid prepared by mixing one component or some components of an electroless plating solution.

14. (Previously Presented) A substrate processing method according to claim 1, wherein said pre-plating treatment and said rinsing treatment are performed in an environment having less oxygen than the atmosphere.

15. (Previously Presented) A substrate processing method according to claim 1, wherein said electroless plating process is performed in an environment having less oxygen than the atmosphere.

16. (Previously Presented) A substrate processing method according to claim 1, further comprising measuring at least one of a film thickness and a film property of said alloy film after said post-cleaning and drying of the substrate.

17. (Previously Presented) A substrate processing method according to claim 1, further comprising maintaining respective compositions and component concentrations of the pretreatment liquid and a rinsing liquid therefore, and a temperature of the pretreatment liquid in predetermined ranges.

18. (Previously Presented) A substrate processing method according to claim 1, further comprising measuring a concentration of an impurity mixed in the pretreatment liquid in said pre-plating treatment, and removing the impurity when the impurity reaches a predetermined concentration.

19. (Previously Presented) A substrate processing method according to claim 1, wherein said electroless plating process includes keeping the temperature, composition, and component concentrations of a plating solution in predetermined ranges, and controlling a plating process time with respect to a predetermined film thickness.

Claims 20-31 (Cancelled).

32. (Previously Presented) A substrate processing method according to claim 1, wherein the pretreatment liquid comprises an aqueous liquid formed of a mixture including palladium sulfate and sulfuric acid.

33. (Previously Presented) A substrate processing method according to claim 1, wherein said pre-plating treatment includes bringing the pretreatment liquid into contact with the surface of the substrate in such a manner as to simultaneously remove the metal oxide film, remove the residue, and impart the catalyst.

34. (Previously Presented) A substrate processing method according to claim 1, wherein said electroless plating process is performed after said removing of the pretreatment liquid remaining on the surface of the substrate.